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ABSTRACT

A study investigated the instructional effectiveness of Autotutor, an interactive video program developed at Trinity College (Ireland), based on its ability to create an environment promoting learner interaction in a second language. Six students in three monolingual pairs (Japanese, Korean, Spanish) were filmed and recorded using the business English program "Meaningful Negotiation." Recordings were transcribed and analyzed for utterance and pause length, and also for the nature of conversational adjustments, including quantity, quality, function in the context of the activity, learner preferences, and first language use. Results are discussed in these areas: use of pairing of learners of different proficiency; preference for certain question types; participants' emphasis on negotiation of content meaning rather than linguistic meaning; task design and degree to which talk is sustained; turn-taking in mixed- and matched-ability pairs; and the program's ability to promote interactional adjustments and sustained talk. Contains 17 references. (MSE)

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ED 407 862

Meaningful Negotiation

A Study of the Pedagogical Value of Autotutor - an Interactive Video Learning Resource

John Stephen Byrne

INTRODUCTION

This paper reports on the results of an investigation into the pedagogical value of Autotutor, an Interactive video learning resource developed at Trinity College, Dublin. Its value is assessed on the basis of its ability to create an environment that promotes learner interaction in the L2. The author's own interests lie very much in examining the advantages and limitations with regard to language learning and computer technology. This paper may be of interest to academics, teachers and research students who are keen to explore and define the role that computer-based materials may have in the language learning process.

Six learners participated in this study consisting of three monolingual pairs, Japanese, Korean and Spanish respectively. The three pairs were filmed and recorded using the Business English programme "Meaningful Negotiation". The recordings were then transcribed in full and the length of utterances and length of pauses measured. This data became the basis for a description of the learners' interaction. I investigated the nature of conversational adjustments from a number of perspectives, quantity, quality, function in the context of the activity, learner preferences and L1 use.

We can summarise our findings as follows. Firstly, a study by Varonis and Gass (1983) demonstrated that arranging pair work between learners of different proficiency levels resulted in more negotiation of meaning than either native speaker-non-native speaker interactions or

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interactions between learners of the same proficiency. The data seemed to support these earlier findings with regard to the quantity of interactional adjustments generated by "mixed-ability" groups when compared to "matched" pairs. Secondly, there is evidence to suggest that learners may prefer to use particular question types and that this is related to proficiency in the target language and the participant's role. Thirdly, the study does seem to support Rulon and McCreary's (1986) findings regarding participants' emphasis on the negotiation of content meaning rather than linguistic meaning during peer group discussion. Fourthly, employing analytic categories outlined by Swain (1983) regarding "comprehensible output" we should note that the "matched" pairs produced more "sustained" talk than the "mixed-ability" pair, although task design seems to be a crucial element if "sustained" talk is to occur. Next, the findings show that there is a near equal distribution of turns in both "matched" and "mixed" pairings. Finally, Autotutor seems to promote (or promote the possibility of) interactional adjustments and "sustained" talk which it is argued are important in language development.

This paper is divided into four sections. The first part attempts to set the context in which the study was undertaken. The second area investigates, briefly, recent research into the issues that arose from the findings. The third section reports on the findings. The final part offers some tentative conclusions regarding the value of computer-based training media.

THE CONTEXT

This paper reports on a research project undertaken at Trinity College, Dublin 1992-93. The author presents his findings based on an analysis of the interaction of three monolingual pairings, Japanese, Korean and Spanish respectively. The participants were all resident in Ireland in June 1993. They followed "Business English" courses. The Japanese and Spanish pairs were "matched" in terms of their level of proficiency (all advanced). The Korean pair were of mixed proficiency (intermediate & advanced). There were four females and two males. The Japanese pair consisted of two females, the Spanish and Korean pairs were mixed. Each pair visited Trinity College for one afternoon. They were presented with a one page written document which explained

the purpose of their visit (see appendix one). The three pairs were filmed and recorded using the Business English programme Meaningful Negotiation. No teacher/facilitator was present during the programme. The programme consisted of a five minute video. The video showed two businessmen negotiate with a third party to complete the purchase of a machine. The video was divided into six segments of approximately fifty seconds each. Each segment consisted of pre-viewing, while-viewing and post-viewing tasks and exercises. Each pair completed the set tasks in approximately 70 minutes.

The video recordings were then transcribed in full and the length of utterances and length of pauses measured. This data became the basis for a description of the learners' interaction. A summary of the learners' reactions to the feedback questionnaire is attached (see appendix two).

THE RELATED RESEARCH

The author draws upon a wide cross-section of research into language learning theory, group dynamics in conventional language learning settings such as the classroom and peer group learning and studies of the impact of course and task design on learner-to-learner interaction. Or to put it more clearly, he sought the answer to the following questions "What do "good" learners do to enable them to become more fluent in the target language?" "How do native speakers interact?" "Will the monolingual groups interact in the target language and does this interaction promote language learning"? He briefly outlines the research in these areas to date below.

WHAT IS L2 (TARGET LANGUAGE) KNOWLEDGE?

L2 knowledge, it is argued, consists of two dimensions, declarative and procedural knowledge. Procedural knowledge likewise has two aspects, one psychological, the other social. Firstly, procedural knowledge is made up of cognitive strategies/processes for learning the L2 and for using the L2. Secondly, it consists of social processes/strategies devised for managing interaction. (Ellis 1985:165)

Yule and Tarone (1991:162) have outlined 4 types of negotiated interactions which they list as follows, communication strategies, repair,

foreigner talk and conversational adjustments. They describe conversational adjustments as the search for clarification of meaning and confirmation of what has just been said. They state that analytic categories include clarification requests, confirmation checks and comprehension checks. (pp.167)

Their general conclusion is that under certain conditions learners do benefit from talking to other learners. Conditions which seem to be beneficial for an increased number of markers of negotiation are shared problem-solving tasks, multicultural groupings and mixed proficiency pairs (Yule and Tarone 1991:164). It is important, they argue, in this strand of research that focuses upon negotiated input to be able to clearly identify key moves of both partners in the negotiation of meaning. They conclude that negotiated input must not be just the result of moves by one speaker but the result of co-operative moves by both speakers (Yule and Tarone 1991:167). This study focused on the interaction of monolingual pairs as this is considered the context in which the programme Negotiate is most likely to operate.

HOW DO PEOPLE INTERACT?

It is clear that an understanding of three factors, setting, topic and the participants themselves, is vital in coming to an understanding of the nature of interaction. An investigation of turn-taking and its mechanisms will highlight, firstly, an underlying orderliness to interaction, secondly, the rights and duties of the participants and, thirdly, a means of identifying the expression of initiative, that is, the distribution of turns may be predetermined or locally managed. (Van Lier 1988:138) The most important point to consider here is the dynamic nature of interaction. Riley et al suggest a study of the illocutionary and interactive acts of the participant can be an index of role in interaction (Riley et al 1985:13).

The examination of participant interaction may give us some insights into Autotutor and enable us to describe this learning resource in relation to the general conversational and classroom turn-taking systems. However, interaction and turn-taking per se become fully relevant only in the context of topic. Interaction is partly organised for the purpose of raising issues to topical status, maintaining them and

changing direction. Van Lier (1988:149) defines topic as a sustained focusing of attention through the talk and across a stretch of talk on some single issue or set of closely related issues. The participants themselves will decide this. Topic is an interactionally negotiated issue. The process of negotiation is undertaken by the participants.

We can see an interface between topic and turn-taking and the direct relevance of turn-taking as a mechanism for overcoming problems of topic coherence. Where a speaker fails to make himself comprehensible, the operation of a repair system and "adjustment-in-interaction" comes into play. (Van Lier 1988:180) This can be linked to earlier observations regarding the role of conversational adjustments in the second language learning process and the notion that language use is language learning. This, as I have mentioned before, is the principal focus of this study of Autotutor as a potential learning resource.

IS THE AUTOTUTOR SETTING REALLY DIFFERENT?

With regard to Autotutor, the learning environment is transformed by the presence of "computer-as-teacher" while the lesson is in progress. The teacher as turn-keeper and turn-allocator is absent. The teacher as "live" modifier of input is also absent. The key difference that emerges is one of teacher as planner and teacher as local manager. Of course, the teacher still has a fundamental role as designer of the lesson and the lesson still has its primary pedagogical goal but the learners take the responsibility for the local management of the interaction. This is not a new role thrust upon learners, it is already a feature of much classroom interaction in the form of pair and group work.

IS TASK DESIGN AND GROUP WORK IMPORTANT?

The contexts in which meaning can be negotiated have been described by researchers who have found that "two-way tasks", in which two participants must share information in order to complete a task or solve a problem are effective in stimulating the development of communication skills. Such activities provide an environment for the development of fluency and the negotiation of meaning. They also stimulate learners to mobilise all their linguistic resources, and push their linguistic knowledge to the limit (Nunan 1988:84). Acquisition studies suggest that classroom communication can foster language

acquisition, particularly if learners are given opportunities for productive language use and the negotiation of meaning in small group work (Nunan 1988:87).

Group work and activities that promote the type of participant control that is a feature of the rule-set of general conversation may lead to the acquisition of skills in speaker change, interactional competence, and therefore to language development (Van Lier 1988:133).

I believe that Autotutor setting mirrors all the attributes that have been described above. The whole focus of this paper is based on the belief that receiving input is not enough but rather that there may need to be negotiation of meaning as well in order to make the incoming speech truly comprehensible (Cohen 1991:112). Most important and central is the interaction with others in meaningful activities (Van Lier 1988:93).

THE AUTOTUTOR PROGRAMME AND SETTING?

The principal features of the Autotutor programme can be described as follows;

TITLE.SCR	lists the linguistic and negotiating skill objectives for each set.
BACK.SCR	activity designed to activate schematic knowledge.
FOCUS.SCR	focused listening task.
SEGMENT	view video.
TASK.SCR	problem-solving task.
REPEAT.SCR	feedback screen.
FINAL.SCR	feedback screen.
TEST.SCR	problem-solving task.
TESTA.SCR	feedback screen.

Ellis argues that the nature of the task undoubtedly impacts upon the level of difficulty of that activity. He distinguishes between "here-and-now" activities and "displaced" activities (Ellis 1985:141). We may surmise that if the task is a displaced activity, there is a greater need on the part of the learners for more questioning behaviour to confirm and clarify understanding. Of course, in the case of monolingual groups, there is the possibility that they will negotiate meaning in the L1.

Learning style or preference may very well play an important part in the learners' commitment to regarding Autotutor as a serious learning resource. As Nunan (1988:6) reports, methodology, which includes learning activities and materials, is generally the area where the greatest potential for conflict between the teacher and the learner lies. The learner seems to have rather fixed ideas about what it is to be a learner (role) and what it is to learn a language (method) (Nunan 1988:94).

THE FINDINGS

What did the learners do?

Table 1 shows learner behaviours as a percentage (%) based on time taken to complete the "Negotiate" programme. The average time taken was 70 minutes but there wasn't a wide variation in the time taken to complete the learning programme (approx. 6 mins between the fastest and slowest groups).

TABLE 1.

Behaviours Found	**Grouping**		
	Japan	**Spain**	**Korea**
Silent reading	21.6	32.2	7.2
Reading aloud	4.5	3	17.4
Pauses	16.5	14	22.9
Dictionary	5.5	0	0
Mother tongue	4.7	0	9.2
Note-taking	3.3	2.7	1
Viewing	22.2	22.1	24.3
Quoting	4.5	3	10
Interaction in TL	14	22.5	8

EXPLANATION OF TERMS

Silent reading refers to the times when learners read the screen in silence. Reading aloud refers to times when learners read directly off the screen. Quoting refers to references made by learners to text on the screen within an interaction slot. Interaction in TL refers to all verbal behaviour, excluding reading aloud, quoting and L1 use. Pauses refers to all periods of silence excluding silent reading, note-taking, searching through a dictionary and viewing the video material, essentially, silences within an interaction slot. Dictionary use refers to silent behaviour which includes time serching for a lexical item and the silent reading of the definition. Mother Tongue refers to the use of the learner's first language. In this context, this means Japanese, Korean and Spanish. Note-taking refers to any writing which includes taking

notes, recording scores, etc. Viewing refers to the learner watching the authentic video material.

"TALKING AND TELLING"

Essentially, these behaviours can be classified into two categories. The first is *"Talking"*. This refers to all learner interaction including L1, *"quoting"*, and target language use. It incorporates pauses as this is a feature of talk. The second is *"Telling"*. This refers to all information transmitted from the screen and video segments. Three behaviours are manifested here: a) learners read the screen silently, b) a learner self-selects and reads aloud, and c) learners listen to video segments. Telling is a feature of all Autotutor's screens and segments.

WHAT ARE THE LEARNERS FIRST REACTIONS TO SEEING A SCREEN?

Not surprisingly, they read them, what is surprising perhaps is that they sometimes read them aloud. We have identified feedback screens in particular to be associated with this phenomenon. Reading aloud and quoting stem from the same source, that is, Autotutor. However, they serve very different functions. The former, it seems, serves to "tell" the other participant what they have to do. It may reflect the status of the participants. It may also have a psycholinguistic function and aid the working memory in processing the information on the screen. The latter behaviour, it appears, enables the learner to both construct and manage the discourse topic. It may also aid the learner in maintaining his/her turn while planning ahead for the next utterance. The extent of this behaviour may be related to the nature of the task.

QUESTIONING BEHAVIOUR

By focusing on the questioning behaviour of each participant we may gain some insights into the dynamics of the interaction, in relation to the quality of the language employed, the status of the participants, the functional use of the L1, the difficulty of the task, the extent of conversational adjustments, the learners' individual learning styles and the significance of their cultural background.

THE FIRST FINDING

Arranging pair work between learners of different proficiency

The first finding related to the quantity of questions per pair. This superficial look at questioning behaviour seems to confirm the study by Varonis and Gass (1983) that there are advantages in arranging pair work between learners of different proficiency levels, that such unequal dyads result in more negotiation of meaning than either native speaker/non-native speaker or interactions between learners of the same proficiency level (Nunan 1988:83).

HOW MANY QUESTIONS WERE ASKED?

The following shows the total number of questions asked by each pairing:

Korean	Japanese	Spanish
163	143	101

THE SECOND FINDING

Who asked the questions? Did one learner dominate?

The second finding that we can quickly identify is related to the source of the question.

	Japanese	Spanish	Korean
Speaker A	52.5%	48%	55%
Speaker B	47.5%	53%	45%

We can see that there is a fairly equal distribution of questioning behaviour among the three pairs. It appears that the optimum condition for negotiated input referred to by Yule and Tarone (1991) earlier are satisfied in that in all cases both parties are making cooperative moves to negotiate meaning.

THE THIRD FINDING

What kinds of questions were they asking each other?

I sought to investigate questioning behaviour from the perspective of its function. Each question was identified for its purpose. This can give us an index of illocutionary acts. In particular we are interested in identifying questioning behaviour as an indication of the extent of negotiation of meaning. The following categories emerged from the data.

(A) **Procedural** inquiry. There are two types of procedural inquiry, one which refers to questions that signal an end of an activity and the readiness of the participant to move to the next screen and the second which refers to questions that relate an Autotutor elicit. Questions are of a "what do we do now?" nature. Autotutor elicited certain behaviours such as "Press any key", "Discuss with your partner" etc. (B) **Code** inquiry refers to questions asked about the meanings of lexical items used by other learners or Autotutor. (C). Questions that represent **interactional** uses of language, that is, questions where the primary focus is social. Richards (1990) states "interactional uses of language are those in which the primary purpose for communication is social. The emphasis is on creating harmonious relations between participants rather than on communicating information" (p 54). (D) **Transactional** inquiry which Richards defines as language used primarily for communicating information. It is message orientated. Language in its transactional functions is needed to acquire new skills, assimilate new information and construct new concepts (p 56).

% of questions asked by type

	Transactional	Procedural	Code
Learner 1	60	20	17
Learner 2	70	20.5	4.5
Learner 3	66	21	10.5
Learner 4	62	30	5.5
Learner 5	80	9	11
Learner 6	55	37	8

THE FOURTH FINDING

How important are comprehension checks, confirmation checks and clarification requests?

Chaudron (1988:131) argues that comprehension checks, confirmation checks and clarification requests should contribute to an index of the interaction/negotiation of the classroom. As a result, the data seems to confirm the findings of Rulon and McCreary (1986), who distinguished between negotiation of linguistic meaning and negotiation of content meaning and argue that peer groups produce significantly more confirmation and clarification checks in regard to lesson content. They conclude that enhancing negotiation of content by using peer group discussion may be the best way to promote interaction and subsequently TL acquisition (Chaudron 1988;108).

Table 2. The Questioning behaviour of the six participants as %

Subj.	Tran			Proc			Code		
	clar	Conf	Comp	clar	Conf	Comp	clar	Conf	Comp
1	37	32	11	13	60	7	84	16	0
2	17	33	19	44	31	6	33	33	33
3	16	42	19	50	50	0	80	0	20
4	33	33	21	12	44	6	0	0	100
5	18	42	24	25	25	25	0	0	100
6	70	20	8	22	67	11	83	0	17

Note: Figures do not include open/closed type questions

A closer examination of these question types in the data appears to indicate that the learners prefer to use particular question types and that this may be related to proficiency. Using a range of question types signals a variety of turn-taking initiatives on the part of the learner. Clarification requests, comprehension and confirmation checks. It is believed that the types of turn described above are key features of interaction which promotes the acquisition of skills in speaker change, interactional competence and therefore to language development (Van Lier 1988:133).

THE FIFTH FINDING

Does Autotutor promote "sustained" interaction?

Finally, we can say that Autotutor can promote "sustained" interaction (as defined by Swain (1991) between participants. Question length. This refers to the length of the question measured according to the criteria set by Swain (1983). She argues that length of student talk is a key factor in second language development. Swain affirms "opportunities to produce sustained output in the second language are crucial to the S.L. learning process. Sustained talk provides the opportunities for variety and complexity of language use and it forces the learner to pay attention to how content is expressed". (p237.) She outlines four categories. 1) *Minimal* which consists of a turn one/two words in length. 2) *Phrase* which is a turn consisting of an adverbial phrase, nominal or verb phrase. 3) *Clause* which is a turn consisting of one clause. 4) *Sustained* which is a turn longer than a clause (p 237). She argues that "language production will have to be at more than phrase or clause level if the learner is to learn the mechanism for coherent and accurate discourse" (Swain 1983:241). We noted earlier that our mixed ability group registered the highest number of conversational adjustments, here we can find that our "matched" pairs, that is, pairs of a similar proficiency produce more "sustained" talk.

I have to admit to having my doubts about Swain's hypothesis regarding output. These doubts are based on our understanding of the spoken features of language. Underwood (1989) summarises Brown & Yule's findings regarding the differences between spoken/written discourse. Spoken language is syntactically simpler, uses incomplete sentences, less specific vocabulary interactive expressions and is less densely packaged (p 12). Of course, certain types of tasks could promote the type of sustained talk suggested by Swain. Duff (1986) reports that the nature of the task will influence the nature of the output. He distinguishes between divergent tasks e.g. a debate and convergent tasks e.g. problem solving activity. The former produces more words per turn while the latter produces more turns. Swain's argument for "sustained" output measured in terms of utterance length doesn't seem to take account of different styles of speaking. Richards (1990) reports that different styles of speaking reflect the roles, age, sex and status of the

participants in interactions. Secondly, it doesn't seem to take into account the constraints of different activity types.

Table 3

% of questions/response based on Swain's categorisations

Question length	**Japanese**	**Spanish**	**Korean**
minimal	25	26	51
phrase	13	19	11
clause	53	51	36
sustained	7	5	5
Response length			
minimal	39	35	51
phrase	6	16	7
clause	23	15	12
sustained	8	24	1

CONCLUSIONS

To conclude, I have sought to describe and examine the constraints of Autotutor in the context of previous studies of natural and classroom learning environments. My description and examination is based on my observations of the learners' interaction. Describing the interaction, however, while interesting in itself, does not indicate if learning (or the opportunity for learning) is taking place. For this reason, I investigated the nature of conversational adjustments from a number of perspectives, quantity, quality, function in the context of the activity, learner preferences and L1 use.

I can summarise the findings as follows. Firstly, the data seemed to support the findings of Varonis and Gass (1983) with regard to the quantity of interactional adjustments generated by "mixed-ability" groups when compared to "matched" pairs. Secondly, the evidence here appears to point to factors such as the nature of the task and the participants' roles as playing a significant part in the development of

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interaction. The level of Proficiency appears to play a part in deciding the role of the participant. The "dominant" party would seem to take the major responsibility for the negotiation of meaning. There is insufficient evidence to speculate on the impact of learner preferences in the use of conversational adjustments. It has been argued that interactional adjustments may promote language development. Thirdly, the study does seem to support Rulon and McCreary' (1986) findings regarding participants emphasis on the negotiation of content rather than linguistic meaning. Fourthly, we should note that the "matched" pairs produced more "sustained" talk, although task design seems to be a crucial element if "sustained" talk is to occur. It has been argued that "sustained" talk could aid language development. Finally, Autotutor seems to promote (or promote the possibility of) interactional adjustments, which it is argued are important in language development.

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APPENDIX 1

INSTRUCTIONS TO THE LEARNER

Autotutor 2 is an interactive video programme. It combines computer technology and video to help you learn new languages.

Today you are going to watch a business negotiation in English. Exercises have been prepared for you to help you understand the video. The computer will guide you through these exercises.

You don't need any computer skills. There are only 3 simple instructions.

* PRESS ANY KEY TO CONTINUE
* PRESS C TO CONTINUE
* PRESS 1 2 or 3

This video has been divided into 6 parts.

a. company information
b. pre-negotiation
c. exploring positions
d. opening gambits
e. bargaining
f. closing of the negotiation

SCORING: As you watch the video, you will be given a TASK to do. After you have completed the task, you will be given a score. Mark this score on your score sheet.

At the end of each part, there is a little TEST. Again, having completed this test, you will receive a score. Mark this score on your score sheet.

Good Luck!

APPENDIX 2

The learners were asked to complete a feedback form upon completing the learning programme.

We can briefly summarise the learners opinions. The title screens and the feedback screens appear to be very warmly received. Likewise the test screens seem to arouse a positive response. Learners were less positive about the back and focus screens. The data suggests that at times the learners found the screens less clear and helpful than other screens. If this was the case we might anticipate more negotiation of meaning as the learners sought to comprehend the demands of the task. In fact back screen elicited a significant number of interactional adjustments, I suspect this had much to do with the level of difficulty of the task. The task screens are not considered to be overly difficult and more importantly relatively clear. In all cases the learners state they had sufficient time. Of course, this is a feature of all computer learning programmes.

In most cases the learners had little experience of using computers in work/ school/home environments. Likewise they had little experience of formal negotiating procedures. Finally, the participants had limited exposure to Interactive Video systems.

Overall, this Interactive Video programme seemed to elicit a favourable response. The participants regard the programme as clear and interesting. Time is sufficient. The response to the level of difficulty is mixed.

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